



ROLE OF SOCIAL MEDIA IN US ELECTIONS





TABLE OF CONTENTS

★ 01 ★

CONTEXT & INTRODUCTION

★ 02 ★

OBJECTIVE

★ 03 ★

CLUSTERING ANALYSIS

★ 04 ★

SENTIMENT ANALYSIS

★ 05 ★

SUMMARY AND IMPACT



CONTEXT

RISE OF SOCIAL MEDIA

“What hath god wrought”

An expression of wonder and marvel at something.

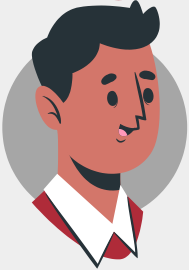
- ★ Social apps like whatsapp, facebook, instagram and twitter
- ★ There are **330 million monthly** active users and **145 million daily users** with a total of **1.3 billion accounts** in total. 22% of Americans are believed to be on twitter.
- ★ **83% of the total world's politicians** are on twitter and **two of the top three influential accounts** are also political leader's accounts.
- ★ Social Media definition of Free Speech



About Us



Shehroz Sohail



Amitabh S Virk



Dr. Ajna Rivera

- We are a team of Data Scientist working for twitter
- We will conduct the analysis of tweets for twitter as well as Election Commision
- Stakeholders: Twitter & Election Commission overseeing US elections.

Objective of the Analysis

- Which candidate is more famous on twitter.
- Clusters of tweets based on polarity of the tweets. Negative, Positive and Neutral.
- Locations with most profound sentiments towards candidates.
- What is the probability of negative and positive tweets towards each candidate and locations if possible.
- Prediction of election results based on our analysis.

PROCESS FOLLOWED

**PROBLEM STATEMENT &
RELEVANT DATA
COLLECTION**

01



02



**PREPROCESSING DATA &
CLUSTERING**



03

**SENTIMENT
ANALYSIS**



04



**SUMMARY &
BUSINESS IMPACT**



Relevant Data Collection



Tweets

Data is downloaded from kaggle and this data organises tweets based on #Trump and #Biden



Vaccination Data

This data is used to see if there is any relation between tweets for particular candidate and Vaccination rates



Location Data

Derived data set from longitude and latitude information embedded in tweets metadata





ANALYSIS

Ajna Rivera

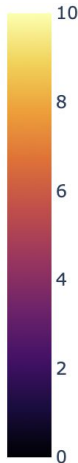
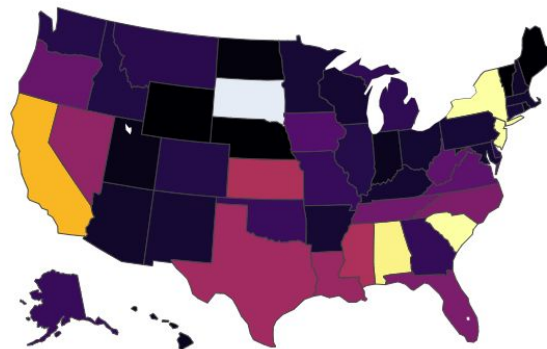
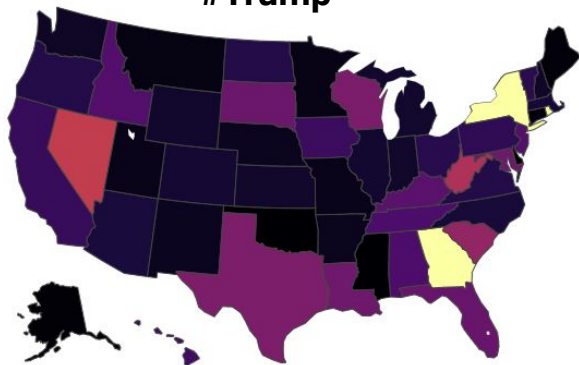


Likes per tweet based on Location

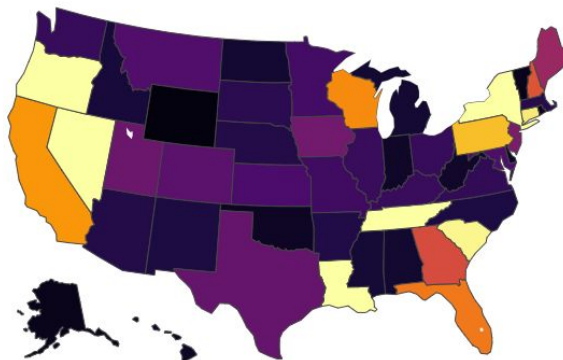
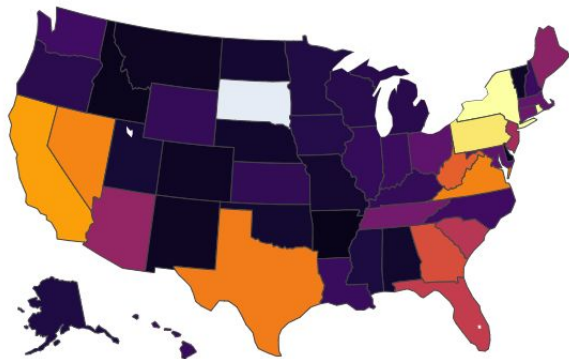
#Trump

#Biden

19 till election

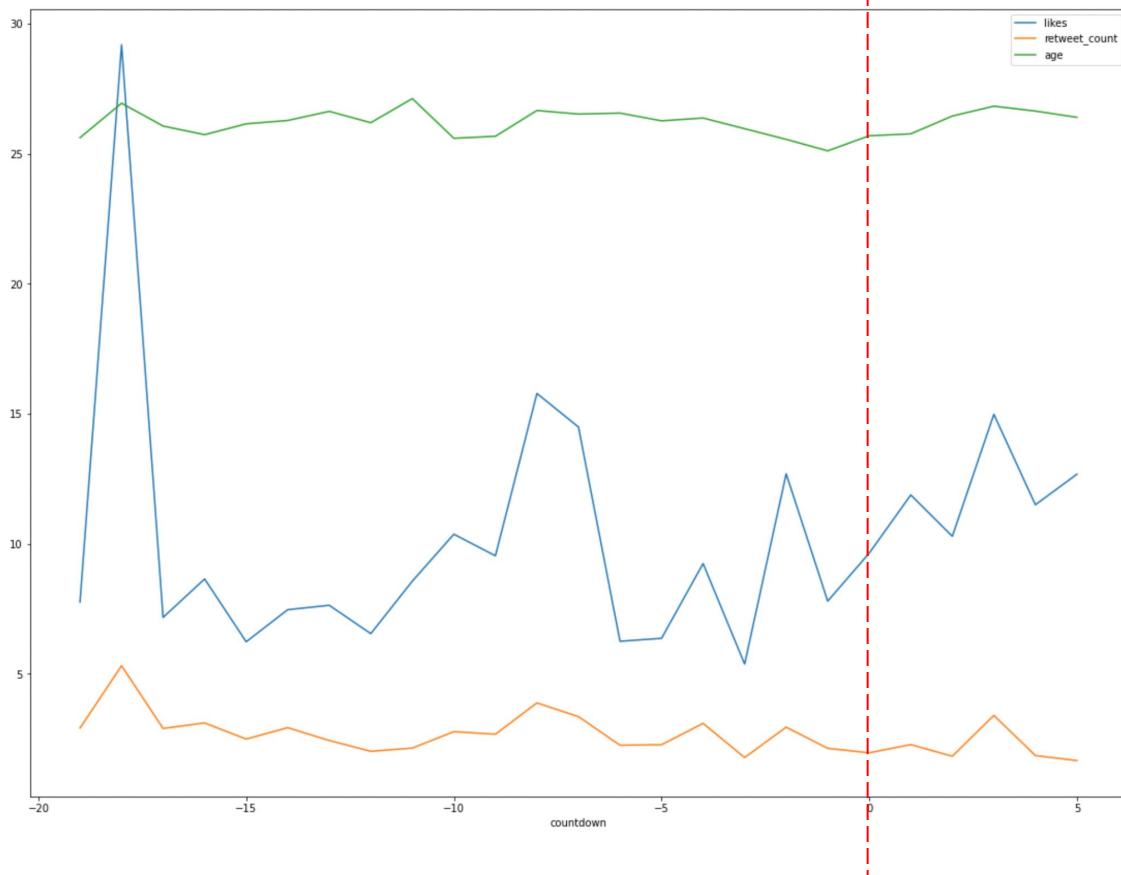


Election day



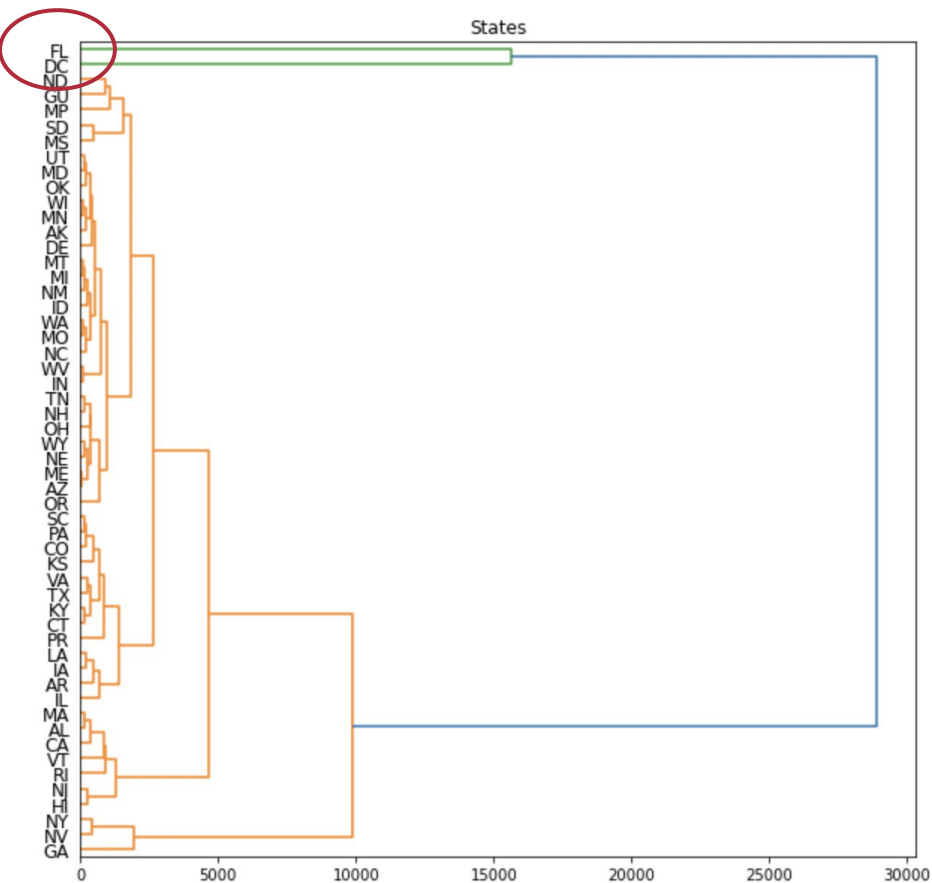
We can see the clear trend that states like **California** which are democratic produce **Biden** tweets with **more likes** compared to states like **Texas** which are republican and produce more well-liked Trump tweets.

Trends In the Tweets during election



The following graph shows the averages for likes, retweets, and age of account per day before and after the election.

Unexpectedly, there was no spike in new accounts by bots just before the election.

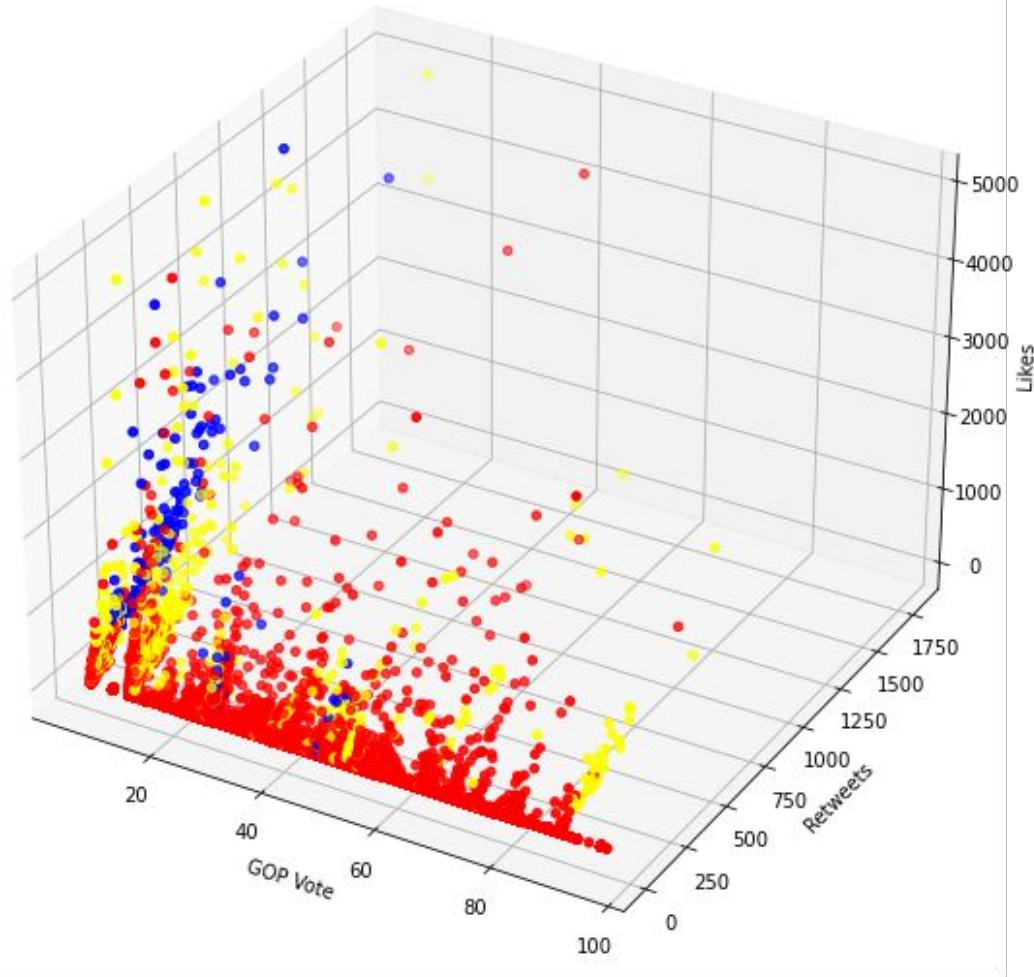


State Clusters

Florida and Washington DC are quite far from the other states. This seems to be driven largely by the huge average follower numbers for DC and Florida accounts

	likes	retweet_count	user_followers_count	countdown	age
state_code					
DC	53.768958	13.129813	40876.581896	-4.394165	2812.385109
FL	3.765860	1.310973	25254.501214	-5.621946	2624.569657
NY	35.814012	7.160325	14128.377329	-4.813247	2773.118530
NV	9.610371	1.824328	14105.782651	-4.869154	2347.321299
GA	6.084378	1.564079	12237.908887	-4.185033	2840.397007

Location vs Popularity

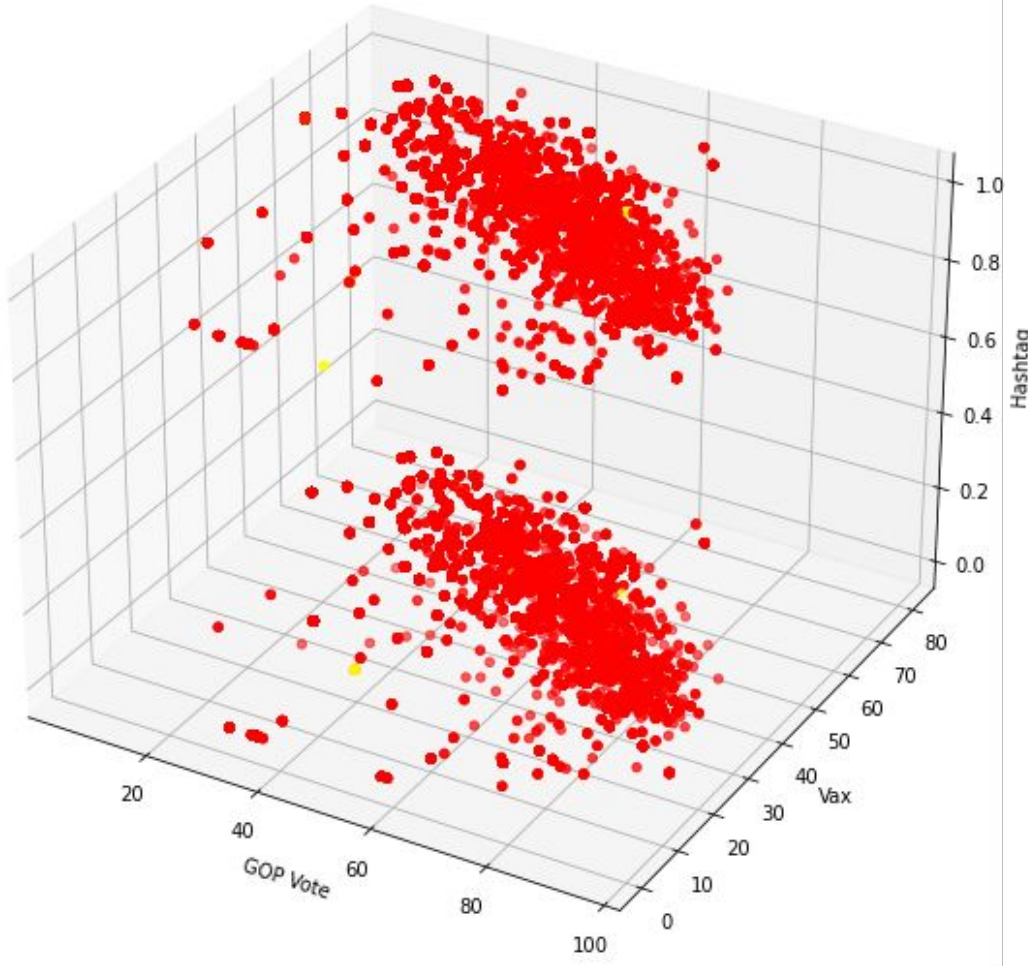


Blue cluster: From very Democratic counties with higher likes and retweets

Hashtag vs Politics

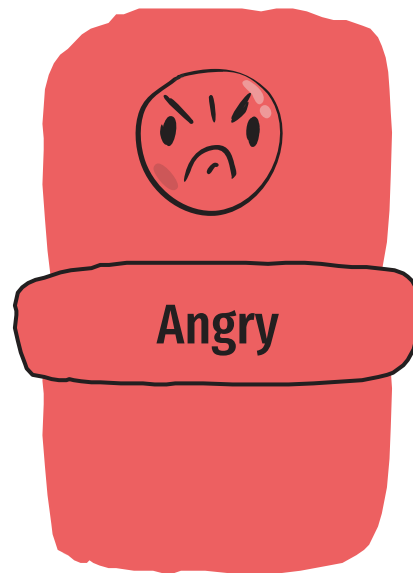
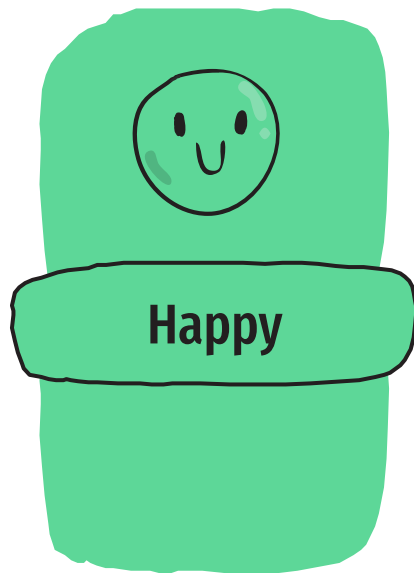
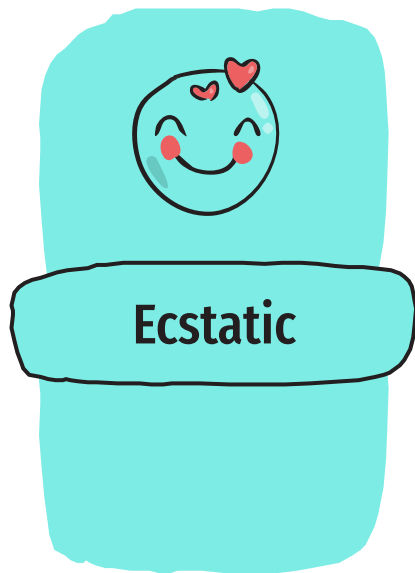
Hashtag does not equate with politics:

Even distribution across % GOP Vote and % Vaccination features



Sentiment Analysis

Shehroz Sohail



STRATEGY

Step 1

Data Collection



Step 3

Training Model (Naive Bayes)



Step 5

Adjusting Hyper Parameters and repeating



Step 2

Pre-Processing

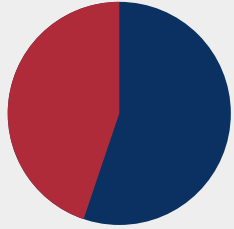


Step 4

Testing

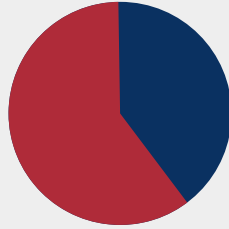


Conditional Probabilities?



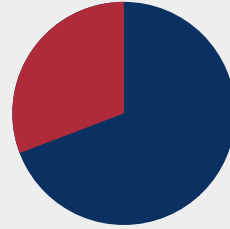
60%

P(+ve |Trump)



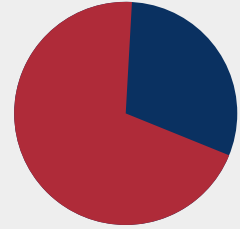
40%

P(-ve |Trump)



70%

P(+ve |Biden)

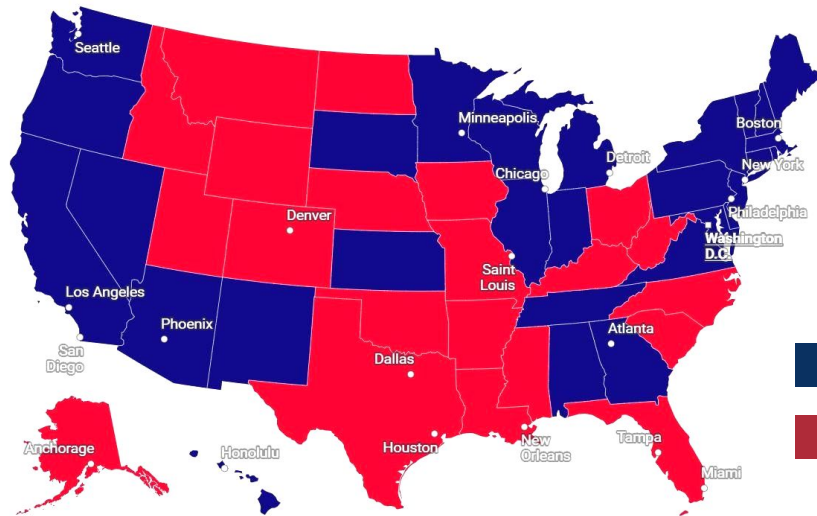


30%

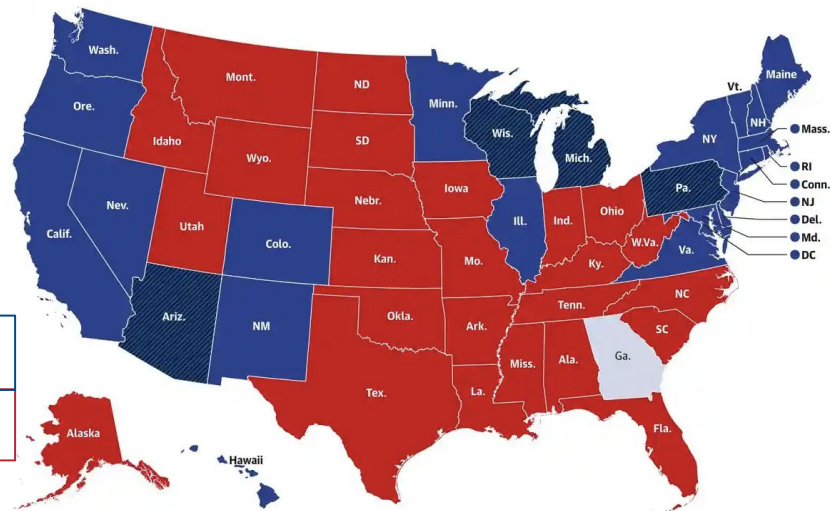
P(-ve |Biden)

Comparison of our Model with Actual results

Predicted



Actual



Our model predicted the results with an accuracy of 88%

The background of the slide features a close-up, textured view of the American flag. The blue field with white stars is visible in the upper left, while the red and white stripes dominate the lower and right portions. The flag appears to be draped or folded, creating a sense of depth and movement.

Thank You

Any Questions?

**A detailed report with all reproducible code will be submitted after the presentation.*